

[0020] In an aspect of the art disclosed herein, the brace may comprise a contact surface that is in contact with a side wall of the spare tire. According to such a configuration, the brace can stably support the spare tire under a normal situation.

[0021] In the aspect described above, at least a portion of the contact surface may be located rearward of the bent portion and may protrude from an upper surface of the brace. According to such a configuration, the brace can stably support the spare tire regardless of a shape of the bent portion (such as a bent angle thereof).

[0022] In an aspect of the art disclosed herein, the electric vehicle may further comprise a high voltage component located frontward of or below the spare tire. As described above, when a rear-end collision occurs to the electric vehicle, the spare tire is pushed upward by the brace. As such, disposing the high voltage component frontward of or below the spare tire can avoid invasion of the spare tire to the high voltage component or can at least reduce a degree of the invasion. The high voltage component referred herein means an electrical component that operates under AC voltage exceeding 30 volts or DC voltage exceeding 60 volts. “The high voltage component located frontward of the spare tire” means that at least a part of the high voltage component is located frontward of a front end portion of the spare tire, and it is irrelevant to positional relationships between the high voltage component and the spare tire in a vehicle vertical direction and in a vehicle width direction. The same applies to the expression “the high voltage component located below the spare tire”. However, in an embodiment, a position of at least a part of the spare tire and a position of at least a part of the high voltage component may coincide with each other in the vehicle width direction.

[0023] In the aspect described above, the high voltage component located frontward of or below the spare tire may comprise at least one selected from a group consisting of a motor configured to drive one or more wheels and a power control unit electrically connected to the motor. Such motor and power control unit are typical examples of high voltage components that operate under high voltage, and they highly need to be protected from the invasion of the spare tire. Further, in some embodiments, disposing the motor and/or the power control unit near wheel(s) may result in positioning the motor and/or the power control unit frontward of and/or below the spare tire disposed in the rear position of the vehicle.

[0024] A simplified expression “longitudinal direction” used in the disclosure herein means a longitudinal direction of the electric vehicle. Similarly, a simplified expression “width direction” means a width direction of the electric vehicle, and a simplified expression “vertical direction” means a vertical direction of the electric vehicle. For example, when the electric vehicle is placed on a horizontal surface, the vertical direction of the electric vehicle matches a vertical direction. Further, the width direction of the electric vehicle is parallel to an axle of the electric vehicle, and the longitudinal direction of the electric vehicle is parallel to the horizontal surface and vertical to the axle of the electric vehicle.

[0025] Representative, non-limiting examples of the present disclosure will now be described in further detail with reference to the attached drawings. This detailed description is merely intended to teach a person of skill in the art further

details for practicing aspects of the present teachings and is not intended to limit the scope of the present disclosure. Furthermore, each of the additional features and teachings disclosed below may be utilized separately or in conjunction with other features and teachings to provide improved electric vehicles, as well as methods for using and manufacturing the same.

[0026] Moreover, combinations of features and steps disclosed in the following detailed description may not be necessary to practice the present disclosure in the broadest sense, and are instead taught merely to particularly describe representative examples of the present disclosure. Furthermore, various features of the above-described and below-described representative examples, as well as the various independent and dependent claims, may be combined in ways that are not specifically and explicitly enumerated in order to provide additional useful embodiments of the present teachings.

[0027] All features disclosed in the description and/or the claims are intended to be disclosed separately and independently from each other for the purpose of original written disclosure, as well as for the purpose of restricting the claimed subject matter, independent of the compositions of the features in the embodiments and/or the claims. In addition, all value ranges or indications of groups of entities are intended to disclose every possible intermediate value or intermediate entity for the purpose of original written disclosure, as well as for the purpose of restricting the claimed subject matter.

EMBODIMENT

[0028] An electric vehicle **10** of an embodiment will be described with reference to the drawings. As shown in FIG. 1, the electric vehicle **10** includes a body **12** and a plurality of wheels **14f**, **14r**. Although not particularly limited, the body **12** is constituted of metal. A passenger compartment and/or a luggage compartment are defined within the body **12**. The plurality of wheels **14f**, **14r** includes a pair of front wheels **14f** and a pair of rear wheels **14r**. The number of the wheels **14f**, **14r** is not limited to four.

[0029] The electric vehicle **10** further includes a motor **16**, a battery unit **18**, a power control unit **20**, and an electronic control unit **22**. The motor **16** is configured to drive at least one of the wheels **14f**, **14r** (such as the pair of rear wheels **14r**). The battery unit **18** is connected to the motor **16** via the power control unit **20**, and is configured to supply power to the motor **16**. The battery unit **18** includes a plurality of secondary battery cells, and is configured to be repeatedly recharged by external power. The power control unit **20** includes a DC-DC converter and/or inverter, and is configured to control power transmitted between the battery unit **18** and the motor **16**. The electronic control unit **22** includes a processor, and is configured to provide control instructions to the power control unit **20** in accordance with operations of a user, for example. The electric vehicle **10** may include other power sources, such as a fuel cell unit or a photovoltaic panel, instead of or in addition to the battery unit **18**.

[0030] The motor **16**, the battery unit **18**, and the power control unit **20** are so-called high voltage components, and are electrical components that operate under AC voltage exceeding 30 volts or DC voltage exceeding 60 volts. On the other hand, the electronic control unit **22** is a low voltage component, which is not categorized as such a high voltage component. The high voltage components, such as the motor